

New York State Green Procurement Program  
Response to Comments on Proposed Specification on  
**‘Cookware and Bakeware’**

**Background:** The proposed new specification for ‘Cookware and Bakeware’ was first considered by the Interagency Committee in April 2021 and tentatively approved for public comment. Based on comments received during 2021, the specification was amended.

**Commenting Entities:** In 2021, comments were received from the American Chemistry Council, Clean and Healthy New York, the New York Sustainable Business Council, and the Sierra Club Atlantic Chapter.

**Issues raised by the American Chemistry Council During the Comment Period:**

**1. Restricting the use of the entire class of PFAS**

**Comments:** ACC states that “the tentative specification for cookware and bakeware treats all PFAS as a single substance. ‘PFAS’ is a generic term that encompasses a large, diverse group of compounds with very different chemical and biological properties. The tentative specification also implicates all PFAS as somehow dangerous. We disagree. The term ‘PFAS’ does not inform whether a substance is potentially harmful or not. The term simply means that molecules covered by the term share a similar structural trait. It does not speak to characteristics such as toxicity, environmental fate, or bioavailability. Some PFAS are small molecules that can enter cells, bioaccumulate, and move easily through the environment. Others are large, stable molecules that are too large to pass through cell membranes and therefore do not bioaccumulate or otherwise interact with biological systems. Fluoropolymers are a distinct group of PFAS that are large, stable, insoluble in water, and are highly resistant to degradation by heat, abrasion, corrosion, or biological processes. They are large molecules that do not cross cellular membranes and do not raise a concern about absorption by the body. Fluoropolymers are not PFOA or PFOS, and do not transform into PFOA or PFOS in the environment.”

**Response:** While PFAS are a large, diverse group of compounds, they all share a common trait – they all contain at least one fully-fluorinated carbon atom. As the carbon-fluorine bond is one of the strongest known, these compounds do not easily degrade and are known to be persistent in the environment [Environ. Sci. Technol. Lett. 2020, 7, 8, 532–543]. As such, it is likely that concentrations of these substances will continue to increase in the environment. Further, as this class of compounds is large and diverse, only a few have been studied in detail. The studies that have been completed have found some of these substances to be bioaccumulative and have also linked several PFAS to negative human health outcomes. Regardless, many health and environmental authorities have suggested that a precautionary approach is needed until more studies are completed to determine that they are safe.

In addition, fluoropolymers are group of chemicals that often require several different PFAS as processing aids or as monomers during their production. As such, fluoropolymer manufacturing has been linked to the release of PFAS into surrounding communities and to the environment. [Environ. Sci. and Tech., 2020, 54, 12820-12828].

**Recommendation:** Retain the requirement to avoid PFAS, including PTFE.

## **2. Restricting the use of PTFE**

**Comments:** ACC states that “PTFE is a highly stable substance resistant to heat, corrosion and other challenges, and it has been shown to adhere to internationally developed consensus criteria for identifying polymers of low concern for human health and the environment. The criteria for identifying polymers of low concern include consideration of the following material characteristics: Polymer composition (structure and elemental composition); Molecular weight; Molecular weight distribution (consistency of molecule size in a sample); Particle size; Percent of oligomers weighing less than 1,000 Daltons; Electrical charge; Reactive functional groups; Presence of low molecular weight leachables; Resistance to physical, chemical, and biological transformation; and thermal stability.

Fluoropolymers like PTFE do not present toxicity concerns or degrade into other PFAS under a wide range of biological and environmental conditions. In fact, because of its strong safety record, PTFE has been used for over 40 years in permanently implantable medical devices, a use that requires extensive testing for genotoxicity, sensitization, carcinogenicity, reproductive toxicity, and developmental toxicity. As with all food contact coatings, the use of PTFE as a finish on cookware and bakeware is regulated by the Food and Drug Administration (FDA) under the Federal Food, Drug and Cosmetic Act. FDA approval requires an enormous amount of use specific information, including extraction tests based on the nature of the coating, the type of food to be handled, and the conditions of use (time, temperature, etc.)”

**Response:** As noted above, fluoropolymers are group of chemicals that often require several different PFAS as processing aids or as monomers during their production. A such, fluoropolymer manufacturing has been linked to the release of PFAS into surrounding communities and to the environment. Additionally, fluoropolymers have been shown to leach from PTFE treated articles in some cases [Environ. Sci. Technol. 2020, 54, 20, 12820–12828], which is especially concerning for food contact materials such as cookware and bakeware.

**Recommendation:** Retain the requirement to avoid PFAS, including PTFE.

**Issues raised by Clean and Healthy New York, the New York Sustainable Business Council, and the Sierra Club Atlantic Chapter During the Comment Period:**

### **1. The specification needs stronger packaging language**

**Comments:** Each of the three organizations listed above commented on the need for stronger packaging specifications. In general, comments can be summarized as follows: Each organization urges “the adoption of specification language that prioritizes a preference for elimination of packaging, then reusable packaging to the greatest extent practicable, and that recycling, or composting be treated as a last resort. Expressing such a preference can further drive innovation and new systems that could grow to benefit broader markets. Listing all packaging solutions together gives the impression that they are all equally acceptable. Without that preference, companies will overwhelmingly choose the more common and convenient recycling and composting pathways, even when the packaging is unlikely to be recycled or composted.”

**Response:** It is expected that the Interagency Committee will revise the model packaging language to prioritize elimination of packaging, followed by reusable packaging, and recycling or composting. The revised packaging language will then be incorporated into the applicable specifications.

**Recommendation:** The Cookware and Bakeware specification will be amended to incorporate the revised packaging language once the language has been finalized.

## **2. The specification does not restrict the use of phenolic handles**

**Comments:** Each of the three organizations listed above commented that the specifications need to discourage the use of phenolic handles. In general, comments can be summarized as follows: These organizations “would like to see additional language discouraging the use of phenolic handles for cookware, which can release toxic fumes containing formaldehyde and phenol when heated.”

**Response:** Several manufacturers list their phenolic handles as oven-safe to either 350 or 390 degrees F. Above that temperature, the material may thermally decompose into its constituent chemicals (i.e., phenol and formaldehyde) which may then be released into indoor air. Additionally, as these materials break down at high temperatures, they contribute to premature failure of the product, which often leads to the disposal of cookware and bakeware items. As these concerns are not present for alternative, durable materials such as steel, aluminum, cast iron, etc., avoiding the use of phenolic plastics in cookware and bakeware is preferred.

**Recommendation:** The Cookware and Bakeware specification will be amended to include a recommendation to avoid phenolic components if the item is to be used at temperatures exceeding 350 degrees.